

THE DISCOVERY OF THE GENUS *GNAMPTODON* HALIDAY (HYMENOPTERA: BRACONIDAE) IN CHINA, WITH DESCRIPTION OF ONE NEW SPECIES

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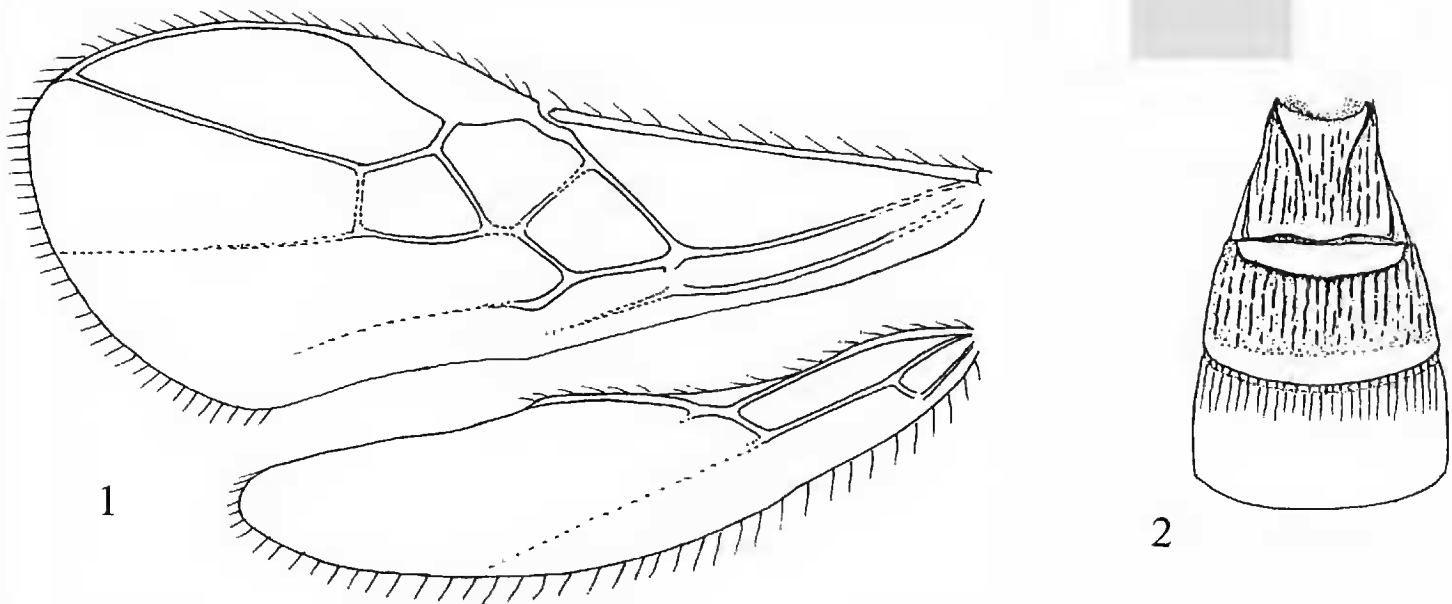
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Abstract.—Two species of *Gnamptodon* are reported in this paper from China including one new species, *Gnamptodon chinensis* sp. nov. It represents the first record of the genus *Gnamptodon* as well as the subfamily Gnamptodontinae in China.

Key Words.—Insecta, Hymenoptera, Braconidae, Gnamptodontinae, *Gnamptodon*, Braconidae, new species, China.

The genus *Gnamptodon* Haliday contains some of the smallest Braconidae, usually scarcely longer than 1 mm, which are exclusively parasitoids of the mining caterpillars of Nepticulidae (Lepidoptera). Thirty seven species, i.e., 15 Palearctic, 7 Nearctic, 3 Oriental, 8 Australian, 3 Afrotropical and 1 Neotropical, have been described worldwide at present (van Achterberg 1983, 1988; Belokobylskij 1987; Narendran & Rema 1996; Papp 1996, 1997; Tobias & Saidov 1997). There were no species recorded in China before this study, although several species have been reported from adjacent countries, such as *G. orientalis* van Achterberg from Thailand, *G. nepalicus* Fischer from Nepal, *G. indicus* Narendran & Rema and *G. malabaricus* Narendran & Rema from India, and *Gnamptodon georginae* van Achterberg from the Russian Far East. The species of this genus seem in general to be rarely collected. Only five specimens were found during this study after the first author examined all of the most important collections in China, including the Parasitic Hymenoptera Collection in Zhejiang University (which started in the 1920s and contains about 0.5 million pinned specimens, and as many specimens in alcohol) and the insect collections of Academia Sinica in Beijing and Shanghai. Two species of *Gnamptodon* are recognized in this paper from China, including one new species, *Gnamptodon chinensis* sp. nov., from the Oriental part of the country. It represents the first record of the genus *Gnamptodon* as well as of the subfamily Gnamptodontinae in China. Specimens of the two Chinese species were collected by sweep net, and therefore there is no host record.

The subfamily Gnamptodontinae contained 4 genera originally, i.e., *Gnamptodon* Haliday, 1837 (cosmopolitan), *Pseudognaptodon* Fischer, 1965 (New World), *Gnaptogaster* Tobias, 1976 (Palearctic) and *Liparophleps* Enderlein, 1920 (Neotropical) (van Achterberg 1983). *Liparophleps* has subsequently been determined to represent a junior synonym of *Semirhytus* Szépligeti (Doryctinae), and thus has been removed from Gnamptodontinae (Marsh 1976, Wharton 1997). Recently Belokobylskij (1999) described another monotypic genus, *Neognamptodon* Belokobylskij, 1999 of the subfamily from Madagascar. Only the biology of *Gnamptodon* and *Pseudognaptodon* is known; both are parasitoids of nepticulid



Figures 1–2. *Gnamptodon chinensis* sp. nov., holotype. 1, wings. 2, first–third metasomal tergites, dorsal view.

larvae, but it is not yet definitively demonstrated whether they are endo- or ectoparasitoids.

For the identification of the genus *Gnamptodon* Haliday, see van Achterberg (1983). For the terminology used in this paper, see van Achterberg (1993) and Chen & He (1997). The type specimen is deposited in the Hymenoptera Collection, Zhejiang University, Hangzhou, China (ZJU).

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Gnamptodon chinensis sp. nov. (Figs. 1 and 2)

Description.—Female: body length 1.5 mm, fore wing length 1.5 mm.

Head: Antennal segments 19, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 3.3, 2.8 and 2.6 times their width respectively; length of eye 2.3 times temple in dorsal view; POL: OD: OOL = 4:2:9; frons virtually flat and distinctly granulate; vertex concave and smooth; face distinctly convex and smooth, with long setae; length of malar space 1.6 times basal width of mandible.

Mesosoma: Length of mesosoma 1.6 times its height; mesosoma smooth; mesoscutal lobes nearly glabrous, without medial depression; scutellar sulcus narrow and finely crenulate.

Wings: Fore wing. r: 3-SR: SR1 = 4:12:48; 1-CU1: 2-CU1 = 2:16; 2-SR: 3-SR: r-m = 16:12:10; length of pterostigma 0.7 times vein 1-R1; length of distance between apex of wing and apex of marginal cell 0.2 times vein 1-R1; pterostigma robust; vein SR1 nearly straight.

Legs: Length of femur, tibia, and basitarsus of hind leg 3.6, 7.0 and 4.0 times their width respectively.

Metasoma: Length of first tergite equal to its apical width, its surface distinctly longitudinally rugose, with dorsal carinae developed; curved transverse elevation of second tergite distinct and smooth, second tergite behind the transverse elevation distinctly longitudinally rugose, apical margin smooth; median length of elevation of second tergite 0.36 times median length of rest of tergite; second intersegmental suture of metasoma distinct, crenulate, with no additional grooves; third tergite basally longitudinally striate, rest of third tergite and following tergites smooth; ovipositor slightly curved downwards, with nodus subapically; length of sheath 0.08 times fore wing, 0.8 times hind basitarsus.

Color: Head yellowish brown, vertex darker; antenna brown, basal four segments yellowish; palpi yellow; mesosoma reddish brown, mesoscutum, scutellum and propodeum darker reddish brown; legs brownish yellow, tarsi and hind tibia yellow; metasoma darker reddish brown, ventrally, tergites 2–4 laterally and fifth and its following tergites brownish yellow. Wing membrane hyaline, pterostigma and veins brown.

Male: Unknown.

Material examined: holotype female, China: Zhejiang, Mt. Gutian, 1990.vii–viii, Ma Yun, no.905760.

Diagnosis.—This species is from the Oriental part of China and is similar to *G. orientalis* van Achterberg, 1983, but can be separated from the latter by having the frons distinctly granulate; scutellar sulcus finely crenulate; length of distance between apex of wing and apex of marginal cell of fore wing 0.2 times vein 1-R1; pterostigma robust; and first and second tergites distinctly longitudinally rugose. It is also similar to *G. pumilio* (Nees), but can be readily distinguished from the latter by the sculpture of the metasomal tergites. It also can be easily separated from the other known species from China, *G. georginae* van Achterberg, 1983, by having the much longer vein 1-R1 of the fore wing.

Gnamptodon georginae van Achterberg, 1983

Gnamptodon georginae van Achterberg, 1983, Tijdschrift voor Entomologie, 126(2): 33.

Material examined: 1 female, China: Liaoning, Dalian, 1991.ix.4, Lou Juxian, no.975981.

Distribution: China (Liaoning); Russia Far East, Algeria, Bulgaria, Switzerland, Hungary.

Note: This species is new to China.

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LITERATURE CITED

- Achterberg, C. van. 1983. Revisionary notes on the subfamily Gnaptodontinae, with descriptions of eleven new species (Hymenoptera: Braconidae). Tijdschr. v. Entomol., 126(2): 25–57.
- Achterberg, C. van. 1988. A new species of the genus *Gnamptodon* from Italy (Hymenoptera: Braconidae). Entomol. Bericht., Amsterdam, 48(10) 1988: 159–161.
- Belokobylskij, S. A. 1987. Subfamily Gnaptodontinae (Hymenoptera: Braconidae) in the USSR Far East. pp. 78–83. In Kapustina, O. G. (ed.). Taxonomy of insects of Siberia and USSR Far East. Vladivostok, 1987: 1–132.
- Belokobylskij, S. A. 1999. New genera of the subfamilies Rhysalinae, Exothecinae and Gnaptodontinae from the Old World (Hymenoptera: Braconidae). Zoosystem. Ross., 8(1): 155–169.
- Chen, Xuexin & H, Junhua. 1997. Revision of the subfamily Rogadinae (Hymenoptera: Braconidae) from China. Zool. Verhand. Leiden, 308: 1–187.
- Fischer, M. 1987. Hymenoptera. Opiinae 3—aethiopische, orientalische, australische und ozeanische Region. Tierreich, 104: ix–xv, 1–734.
- Marsh, P. M. 1976. Pars 13. Braconidae 9, Doryctinae. pp. 1331. In Vecht, J. van der & R. D. Shenefelt (eds.). Hymenopterorum Catalogus (Nova Editio). Dr. W. Junk, The Hague.
- Narendran, T. C. & C. G. Rema. 1996. Three new species of Braconidae (Hymenoptera) from India. J. Ecobiol., 8(2), 1996: 135–142.
- Papp, J. 1996. Braconid wasps from the Cape Verde Islands (Hymenoptera, Braconidae) 1. Cheloninae, Exothecinae, Homolobinae, Microgastrinae, Rogadinae. Bol. Mus. Munic. Funch., 48: 197–216.
- Papp, J. 1997. New braconid wasps (Hymenoptera, Braconidae) in the Hungarian Natural History Museum, 5. Ann. Hist.-Nat. Mus. Nat. Hung., 89: 157–175.
- Tobias, V. I. & N. Sh. Saidov. 1997. Two new species of braconid wasps (Hymenoptera, Braconidae) from Tajikistan. Entomol. Oboz., 76(1): 210–212, 236.

Wharton, R. A. 1997. Subfamily Gnamptodontinae. pp. 256–259. *In* Wharton, R. A., P. M. Marsh & M. J. Sharkey (eds.). Manual of the new world genera of the family Braconidae (Hymenoptera). Spec. Pub. Intern. Soc. Hymenopt., No. 1. Washington, D.C.

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